

Mineral Industry Surveys

For information, contact:

Kim B. Shedd, Cobalt Commodity Specialist

U.S. Geological Survey

989 National Center

Reston, VA 20192

Telephone: (703) 648-4974, Fax: (703) 648-7757

E-mail: kshed@usgs.gov

JoAnn Sterling (Data)

Telephone: (703) 648-7953

Fax: (703) 648-7975

MINES FaxBack: (703) 648-4999

Internet: <http://minerals.usgs.gov/minerals>

COBALT IN DECEMBER 1999

On the basis of preliminary monthly data, U.S. consumption of cobalt in 1999 was approximately the same as that during 1998, according to the U.S. Geological Survey. U.S. imports of cobalt metal and cobalt contained in chemicals were 4% higher during January through November 1999 than imports during the first 11 months of 1998. Exports of unwrought cobalt and cobalt contained in chemicals during the first 11 months of 1999 were 10% lower than exports during the same period in 1998. Trade data for December 1999 will be available in a subsequent issue.

Note

With the exception of prices, all data in this report have been rounded to no more than three significant digits. Totals and percentages were calculated by using unrounded data.

Update

On February 24, the Defense National Stockpile Center (DNSC), U.S. Department of Defense, announced that it had awarded 302 metric tons (666,000 pounds) of cobalt granules and rondelles at a total value of \$7.5 million. The following companies were awarded cobalt: Glencore Ltd., Stamford, CT, Metals Resources Group Ltd., London, England, and Sovereign Recycling International, Bettendorf, IA. The next cobalt offer will be on a negotiated bid basis. While a specific date has not been set, DNSC

anticipates that the offer will occur in late March or early April (Defense National Stockpile Center, 2000). Further information on DNSC's cobalt sales program is available from DNSC's contracting officer for cobalt, Jennifer Iribarren, at (703) 767-5487.

Price

Prices for electrolytic cobalt, in dollars per pound, from Platt's Metals Week are listed below.

<u>Date</u>	<u>Price range</u>
January 27	14.50-15.50
February 3	14.50-15.50
February 10	14.00-14.75
February 17	13.00-14.00

<u>Month</u>	<u>Average price</u>
January	14.97

Reference Cited

Defense National Stockpile Center, 2000, Stockpile accepts cobalt bids: Fort Belvoir, VA, Defense National Stockpile Center news release, February 24, 1 p.

TABLE 1
U.S. REPORTED CONSUMPTION OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

Period	Metal 2/	Oxide and other chemical compounds 3/	Scrap	Total
1998:				
January-December 4/	3,780	1,950	2,980	8,710
Year 5/	4,240	1,860	3,080	9,180
1999:				
January	308	192	248	748
February	326	156	250	733
March	330	180	255	765
April	303	182	249	734
May	324	153	254	732
June	323 r/	194	248	765 r/
July	306 r/	141	257	704 r/
August	312 r/	153	257	722 r/
September	298 r/	164	249	711 r/
October	312 r/	135	250	697 r/
November	313	121 r/	251	685 r/
December	313	168	248	729
January-December	3,770	1,940	3,020	8,720

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes metal powder.

3/ Data may include other cobalt materials.

4/ Data based on monthly reports.

5/ Includes annual reports.

TABLE 2
U.S. REPORTED CONSUMPTION OF COBALT, BY END USE 1/

(Metric tons, contained cobalt)

End use	1998		1999	
	January- December 2/	Year 3/	December	January- December
Steel:				
Stainless and heat resisting	38	38	3	38
Tool	W	96	W	W
Superalloys	3,770	4,110	337	3,990
Alloys (excludes steels and superalloys):				
Magnetic alloys	721	771	58	736
Other alloys 4/	375	421	W	W
Cemented carbides 5/	843	844	53	674
Chemical and ceramic uses:				
Catalysts	W	W	W	W
Driers in paints or related usage	W	W	W	W
Ground coat frit	W	W	W	W
Pigments	W	W	W	W
Miscellaneous and unspecified 6/	2,960	2,900	278	3,280
Total	8,710	9,180	729	8,720

W Withheld to avoid disclosing company proprietary data; included with "Miscellaneous and unspecified."

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Data based on monthly reports.

3/ Includes annual reports.

4/ Includes nonferrous alloys, welding materials, and wear-resistant alloys.

5/ Includes diamond bit matrices, cemented and sintered carbides, and cast carbide dies or parts.

6/ Includes feed or nutritive additive, full-alloy steel, glass decolorizer, mill products made from metal powder, and data indicated by the symbol "W."

TABLE 3
U.S. REPORTED STOCKS OF COBALT MATERIALS 1/

(Metric tons, contained cobalt)

Period	Industry 2/				U.S. Government, 3/ metal
	Metal 4/	Oxide and other chemical compounds 5/	Scrap	Total	
1998:					
December 6/	338	285	88	712	14,700
Yearend 7/	356	306	89	750	14,700
1999:					
January	357	223	128	709	14,700
February	330	203	128	661	14,600
March	318	195	129	641	14,400
April	316	195	127	638	14,200
May	335 r/	226	129	691 r/	14,100
June	303 r/	213	138	654 r/	13,800
July	344 r/	215	132	690 r/	13,600
August	325 r/	203	131	659 r/	13,400
September	332 r/	211	126	668 r/	13,300
October	342 r/	246	128	715 r/	13,300
November	333 r/	246 r/	122	701	13,200
December	309	230	125	664	13,200

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Stocks reported by cobalt processors and consumers.

3/ Data from Defense Logistics Agency. Includes material committed for sale pending shipment.

4/ Includes metal powder.

5/ Data may include other cobalt materials.

6/ Data based on monthly reports.

7/ Includes annual reports.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF COBALT, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Metals 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1998:								
November	524,000	\$19,200,000	155,000	\$4,440,000	37,300	\$397,000	645,000	7,100,000
December	466,000	14,500,000	76,000	1,950,000	174,000	2,430,000	567,000	7,670,000
January-December	6,450,000	284,000,000	1,210,000	41,500,000	1,310,000	13,600,000	7,670,000	XX
1999:								
January	605,000	16,200,000	160,000	3,810,000	70,800	529,000	739,000	739,000
February	528,000 7/	12,800,000 7/	81,100	1,570,000	55,900	430,000	601,000	1,340,000
March	736,000	25,200,000	97,400	2,650,000	33,000	217,000	815,000	2,160,000
April	735,000	23,000,000	129,000	3,720,000	72,200	599,000	847,000	3,000,000
May	514,000	16,200,000	88,500	2,330,000	126,000	931,000	611,000	3,610,000
June	798,000	26,200,000	128,000	3,370,000	153,000 7/	950,000 7/	940,000	4,550,000
July	535,000	21,300,000	81,000	2,230,000	147,000	1,330,000	633,000	5,190,000
August	278,000	11,100,000	76,200	2,290,000	166,000	1,350,000	378,000	5,560,000
September	578,000	22,500,000	81,300	2,460,000	225,000	1,850,000	696,000	6,260,000
October	386,000	14,500,000	117,000	3,130,000	207,000	1,580,000	525,000	6,790,000
November:								
Belgium	2,930	146,000	26,500	759,000	--	--	22,000	292,000
Brazil	20,000	573,000	--	--	--	--	20,000	188,000
Canada	54,300	1,770,000	--	--	930	19,600	54,700	727,000
China	--	--	12,000	292,000	--	--	8,640	23,800
Congo (Brazzaville)	57,900 7/	2,810,000 7/	--	--	--	--	57,900	57,900
Congo (Kinshasa)	46,300	1,330,000	--	--	--	--	46,300	846,000
Finland	39,800	1,640,000	7,200	274,000	169,000	1,290,000	89,800	1,780,000
France	575	30,700	2,680	143,000	--	--	2,500	44,000
Germany	30,000 7/	652,000 7/	67,400	1,920,000	--	--	78,500	139,000
India	--	--	300	8,090	--	--	216	292
Japan	674	40,000	--	--	--	--	674	19,400
Korea, Republic of	--	--	--	--	--	--	--	402
Netherlands	--	--	--	--	--	--	--	7,990
Norway	80,300	2,540,000	--	--	--	--	80,300	1,420,000
Russia	54,900	1,600,000	--	--	--	--	54,900	728,000
South Africa	500	44,400	--	--	--	--	500	6,510
United Kingdom	40,000	1,150,000	20,700	312,000	175	3,770	54,900	253,000
Zambia	39,900	1,220,000	--	--	--	--	39,900	869,000
Total	468,000	15,500,000	137,000	3,710,000	170,000	1,310,000	612,000	7,400,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Unwrought cobalt, excluding alloys; includes cobalt cathode and cobalt metal powder.

3/ Includes cobalt acetates, cobalt carbonates, cobalt chlorides, and cobalt sulfates.

4/ Customs value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census, with adjustments by the U.S. Geological Survey.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF ADDITIONAL COBALT MATERIALS, BY COUNTRY 1/

(Kilograms, gross weight of material, except as noted)

Period and country of origin	Unwrought cobalt alloys		Other cobalt: matte, waste and scrap 2/		Wrought cobalt and cobalt articles	
	Quantity	Value 3/	Quantity	Value 3/	Quantity	Value 3/
1998:						
November	9,710	\$629,000	250,000	\$2,360,000	14,900	\$747,000
December	28,400	1,240,000	14,900	225,000	27,700	901,000
January-December	315,000	11,600,000	857,000	10,800,000	217,000	11,300,000
1999:						
January	23,100	1,300,000	9,610 4/	535,000 4/	18,100	946,000
February	29,400	1,330,000	28,900 4/	826,000 4/	13,000	765,000
March	10,600	740,000	54,500 4/	991,000 4/	29,200	1,020,000
April	50,400	1,670,000	74,100 4/	1,150,000 4/	16,100	651,000
May	40,000	493,000	27,900 4/	539,000 4/	11,200	723,000
June	2,290	129,000	40,600 4/	855,000 4/	16,200	710,000
July	3,450	126,000	94,800 4/	1,650,000 4/	17,800	772,000
August	4,720	165,000	34,200 4/	1,430,000 4/	6,710	591,000
September	100,000	3,280,000	26,500 4/	565,000 4/	12,700	686,000
October	9,890	285,000	47,500 4/	1,500,000 4/	9,560	841,000
November:						
Austria	--	--	1,130	3,940	--	--
Belgium	8,880	287,000	2,780 4/	73,500 4/	336	20,700
Canada	579	61,600	7,130 4/	363,000 4/	2,080	244,000
France	--	--	4,980 4/	278,000 4/	2,620	151,000
Germany	--	--	1,810	24,200	1,330	55,200
India	--	--	--	--	1,130	31,100
Japan	1,040	75,600	15,500 4/	589,000 4/	438	68,400
Sweden	1,040	24,400	--	--	--	--
Switzerland	--	--	394	4,810	--	--
United Kingdom	215	8,160	39,700 4/	328,000 4/	3,440	216,000
Total	11,800	457,000	73,400	1,660,000	11,400	786,000

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Includes other intermediate products of cobalt metallurgy; may include other cobalt-bearing materials from which cobalt is extracted, or from which cobalt-containing chemical compounds are manufactured.

3/ Customs value.

4/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census, with adjustments by the U.S. Geological Survey.

TABLE 6
U.S. EXPORTS OF COBALT MATERIALS 1/

(Kilograms, gross weight of material, except as noted)

Period	Unwrought cobalt, powders, matte, waste and scrap 2/		Oxides and hydroxides		Salts and compounds 3/		Total cobalt content for the month 5/	Cobalt content, year to date 5/ 6/
	Quantity	Value 4/	Quantity	Value 4/	Quantity	Value 4/		
1998:								
November	64,600	\$2,670,000	29,700	\$579,000	25,500	\$261,000	92,100	1,520,000
December	118,000	3,300,000	30,000	461,000	76,000	281,000	158,000	1,680,000
January-December	1,140,000	43,400,000	533,000	11,300,000	674,000	4,140,000	1,680,000	XX
1999:								
January	25,600	1,090,000	35,100 7/	420,000 7/	11,800	96,500	53,700	53,700
February	56,000	2,320,000	37,200	465,000	9,500	93,500	85,100	139,000
March	78,900	3,210,000	46,200	853,000	47,300	338,000	123,000	262,000
April	105,000	3,840,000	36,600	521,000	38,500	377,000	141,000	403,000
May	240,000	7,040,000	30,600	545,000	11,900 7/	150,000 7/	265,000	667,000
June	109,000	3,530,000	24,100 7/	231,000 7/	7,320	88,300	128,000	796,000
July	64,700	3,120,000	20,000	277,000	25,200	184,000	85,100	881,000
August	59,500	1,990,000	35,900	554,000	23,200	240,000	90,900	972,000
September	82,300	2,450,000	21,100 7/	394,000 7/	14,700	165,000	101,000	1,070,000
October	60,400	2,980,000	92,600	1,930,000	20,200	196,000	132,000	1,200,000
November	91,900	2,950,000	75,900	1,400,000	53,100	874,000	160,000	1,360,000

XX Not applicable.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ May include other intermediate products of cobalt metallurgy, and unwrought cobalt alloys.

3/ Cobalt acetates and cobalt chlorides.

4/ Free alongside ship (f.a.s.) value.

5/ Estimated from gross weights.

6/ Year to date may include revisions to prior months.

7/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census, with adjustments by the U.S. Geological Survey.

TABLE 7
U.S. EXPORTS OF WROUGHT COBALT, COBALT ORE, AND CONCENTRATES 1/

(Kilograms, gross weight of material, except as noted)

Period	Wrought cobalt and cobalt articles		Cobalt ore and concentrates	
	Quantity	Value 2/	Quantity	Value 2/
1998:				
November	46,300	\$2,800,000	733	\$47,800
December	36,400	2,130,000	--	--
January-December	667,000	33,900,000	128,000	3,500,000
1999:				
January	24,200	1,480,000	31,400 3/	457,000 3/
February	45,000	2,460,000	14,500 3/	29,500 3/
March	80,000	2,050,000	76,200 3/	94,300 3/
April	54,300	2,410,000	434 3/	3,900 3/
May	40,600	2,170,000	21,900 3/	254,000 3/
June	61,300	3,130,000	10,300 3/	333,000 3/
July	31,900	2,200,000	63,000 3/	768,000 3/
August	37,400	1,820,000	13,600 3/	438,000 3/
September	25,000	1,730,000	--	--
October	71,200	3,270,000	11,000 3/	328,000 3/
November	46,000	2,010,000	643 3/	12,100 3/

1/ Data are rounded to three significant digits.

2/ Free alongside ship (f.a.s.) value.

3/ All or part of these data have been referred to the Bureau of the Census for verification.

Source: Bureau of the Census, with adjustments by the U.S. Geological Survey.